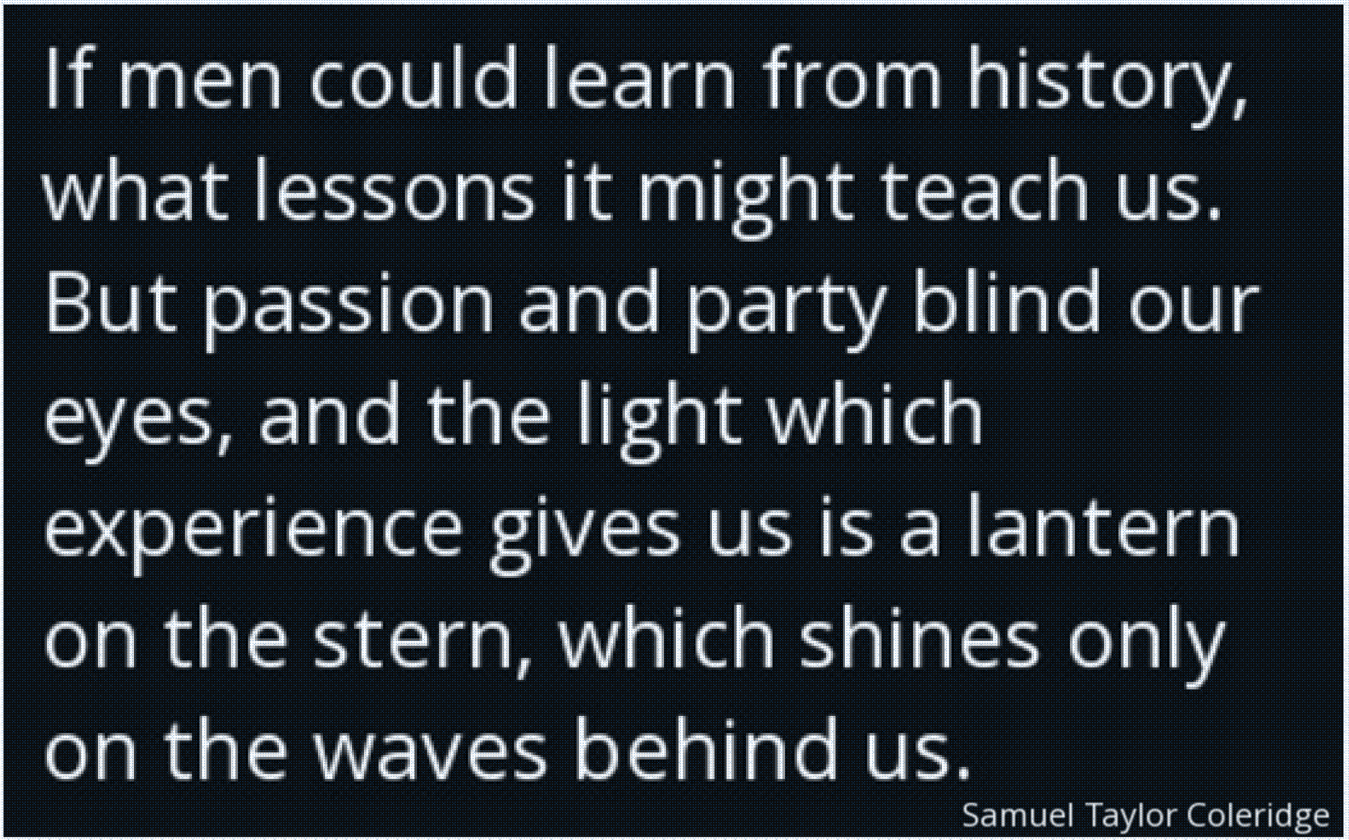
PLEASE STAND BY
REGULAR PROGRAMMING WILL RESUME SHORTLY
325
50
375
300
30
35
45



If men could learn from history, what lessons it might teach us. But passion and party blind our eyes, and the light which experience gives us is a lantern on the stern, which shines only on the waves behind us.

Samuel Taylor Coleridge

MRIP

MIECM CVRD

FIRESTORM 2003

BRITISH COLUMBIA

FIRESTORM 2003

- Worst ever fire season in BC was 2003 with 2500 fires
- Fires destroyed 334 structures and evacuated 45,000 people
- Three pilots lost their lives in the line of duty
- Damages totaled $700 million
- 60+ fire departments responded plus 1000 forest firefighters
- Firestorm 2003 was a horrific event teaching many lessons.
- The 2004 government commissioned Filmon Report outlined the statistics and suggested action plans. To date, few of the key recommendations have been implemented – so much of the report content remains relevant to this day.

FIRESTORM 2003

- Specific to communications, we learned…
- Strategy for radio interoperability is required to link all responding agencies
- Existing radio systems were not expandable to manage load
- 60 fire departments responded, many use proprietary systems
- Some existing VHF channels could not be programmed into newer radios (W versus N-band)
- Some fire departments have inter-operable radios, but other F, P and A responders lack operational compatibility
- Amateur radio operators were invaluable but at times were an overlooked resource in the big picture
- No pre-plan for radio interoperability existed

FIRESTORM 2003

- Specific to AR communications, we learned…
- Emergency radio systems failed, but AR filled the gap in many instances
- AR not considered integral to emergency response system
- Involvement of AR was an after-thought in many cases
- AR was not assigned space in the EOC
- Filmon Report recommended… all EOC's should include provision for AR operators including power / antenna space as needed. The AR systems should be regularly exercised as part of normal operations.

AR = Amateur Radio

FIRESTORM 2003

(c) Daniel Cattoni

FIRESTORM 2003

FIRESTORM 2003

- Based on the belief that a radio interoperability pre-plan is critical to the survivability of any community, action was needed to address building such a resource on Vancouver Island
- The Mid-Island Emergency Coordinators and Managers (MIECM) group embraced the notion of a radio interoperability pre-plan in September 2016
- The plan is divided into both Amateur and Commercial
- The **M**ulti-jurisdictional **R**adio **I**nteroperability **P**roject or MRIP is now at the deployment stage

Multijurisdictional Radio Interoperability Project

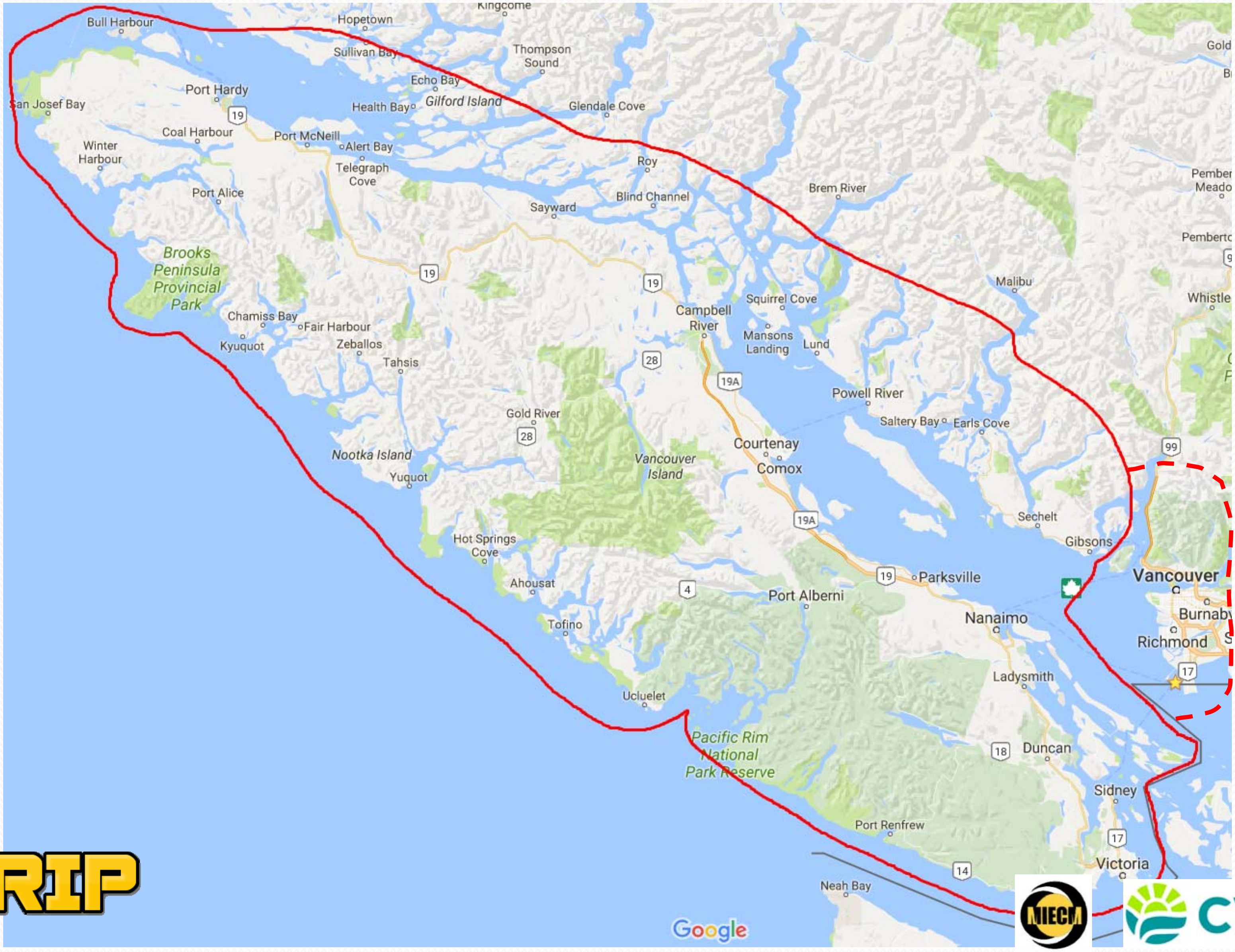
MRIP

Linking the MIECM and its operational partners

V2.3CA dated March 24, 2017

MIECM CVRD

MRIP - Operational Area



Project Vision

- Create an interoperable radio communication pre-plan within both the amateur and commercial spectrum to support the MIECM and its extended local jurisdiction emergency program partner activity through the development and implementation of a regionally-centric standardized approach to VHF & UHF radio frequency programming.

MIECM = Mid Island Emergency Coordinators and Managers (Vancouver Island)

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What is ‘Interoperability’

BCEMS 2016

- Ability of emergency personnel to communicate between jurisdictions, disciplines, and levels of government, using a variety of systems as needed and authorized. In the context of this definition, distinctions can be made between technical interoperability and functional interoperability
  - **Technical** interoperability exists when two or more communications devices can send and receive information to and from each other.
  - **Functional** interoperability exists when users have the leadership and support, standard operating procedures, technology, training, and regular usage to enable predictable and consistent communication.

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MRIP – Key Objectives

- Develop a common amateur radio programming code-plug for all local jurisdictions to increase functional preparedness for mutual aid scenarios

- Develop an MIECM common use strategy for the EMBC frequencies

- Utilize the MIERCT to facilitate the data gathering, code-plug creation and ongoing data maintenance component of the project

- Develop an interoperability strategy for point-to-point EOC linking using either existing frequencies or a private trunked 'fee for service' radio initiative.

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Emergency Communications

- Emergency communications typically consists of:
  - **Operability**: the ability to establish and sustain communications in support of mission operations.
  - **Interoperability**: the ability of emergency personnel to communicate between jurisdictions, disciplines, and levels of government, using a variety of systems, as needed and as authorized.
  - **Continuity of Communications**: The ability of emergency response agencies to maintain communications in the event of damage to, or destruction of, the primary infrastructure.

MRIP http://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/ntrprblt-strtg/index-en.aspx MIECM CVRD

Communication Networks

- Each incident requires a communications plan (ICS205) which must reflect operational functionality to be effective and will include the following:
  - **Command Net**: overall event control point linking supervisory personnel from Incident Commander down to and including division and group supervisors.
  - **Tactical Nets**: site specific traffic established by agency, department, geographical area, or function for each branch, or for divisions and groups, depending upon hardware and frequency availability, and specific incident needs.

MIECM communication challenge

- Multi-jurisdictional area with no radio interoperability plan
- No pre-plan initiative to address mutual aid support
- No plan to coordinate radio resources during a large scale event or mutual aid scenario
- No common radio technology platform vision
- Massive volume of operational frequency data in both the amateur and commercial spectrum
- Multiple 911 service providers throughout the area
- Relocation of resources in a large scale event face immediate communication challenge arriving onsite
- Implementation of EMBC (VHF) frequencies is unknown

The work that needs to be done…

- Work required on the following initiatives:
  - Creation of a multi-jurisdictional radio interoperability plan
  - Standardization of a common radio technology platform
  - Collect local jurisdictional radio frequency data within both the amateur and commercial spectrum (including SAR)
  - Universal implementation of EMBC (VHF) frequencies
  - Common use approach to utilization of EMBC frequencies
  - Development of common radio code-plug throughout MIECM
  - Development of radio programming update strategy
  - Generate and share LOA for emergency use of existing (commercial) frequencies to support mutual aid scenarios

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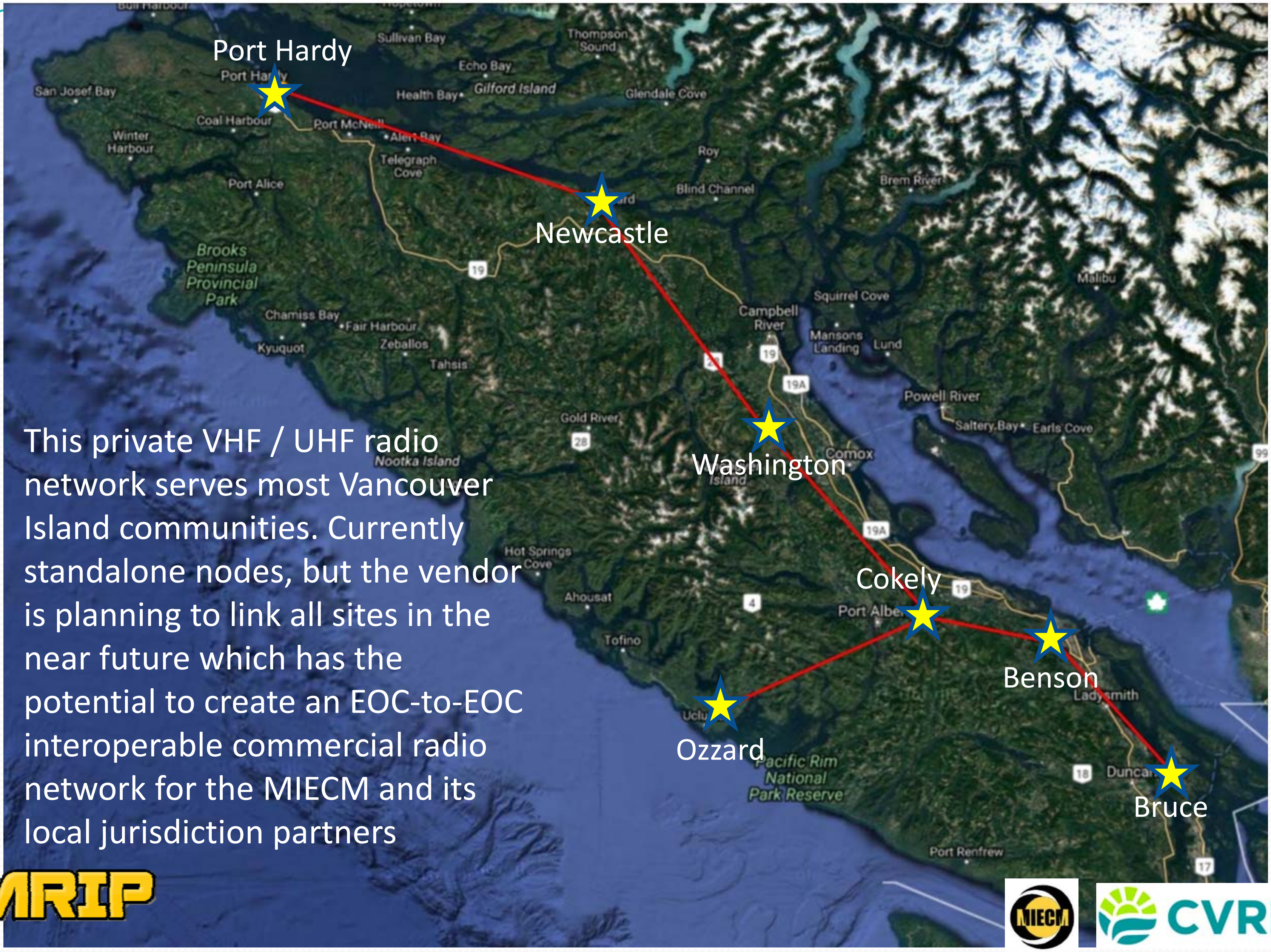
Island Communication radio sites

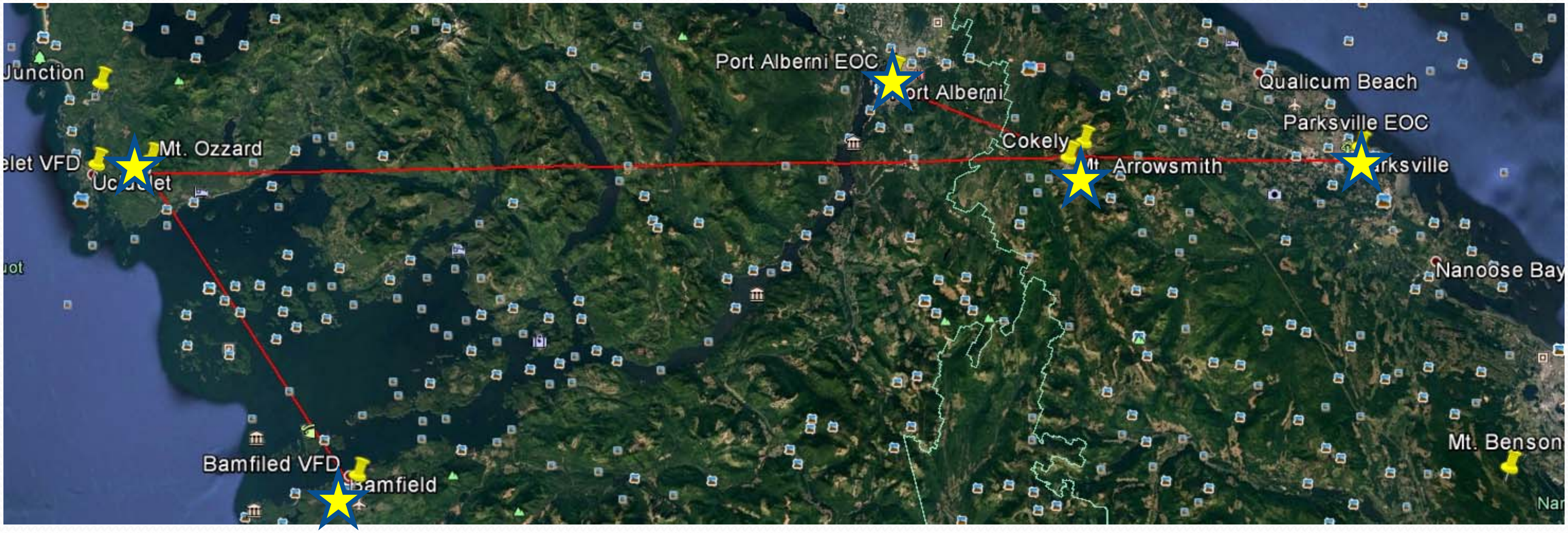


This private VHF / UHF radio network serves most Vancouver Island communities. Currently standalone nodes, but the vendor is planning to link all sites in the near future which has the potential to create an EOC-to-EOC interoperable commercial radio network for the MIECM and its local jurisdiction partners

2017 Radio test scenarios

#1: MIERCT will test point-to-point connectivity from Bamfield through Mt. Ozzard to both Port Alberni and Parksville EOC's via the Mt. Arrowsmith repeater site.

✓ This test very successful test took place on Thursday, February 09, 2017✓



#2: In advance of an Island Communications 'fee for service' trunked EOC connectivity model, inter-EOC testing will be conducted using commercial radio frequencies to determine viability in support of mutual aid scenarios. This test (Bamfield to Ozzard to both Port Alberni and Parksville EOC's via the Mt. Cokely repeater site) has been discussed with the service provider and is awaiting local budget approval.

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Linked (commercial) radio network

- High level radio sites create a robust network
- Standalone sites are good, but linked sites are even better
- Linked sites enable a private trunked network to evolve
- Network owner is planning to link all their radio sites
- Access would link all the MIECM partners
- Low monthly cost per radio plus annual ISED licence fee
- Many of our agency partners use this type of network to span the province on a daily basis

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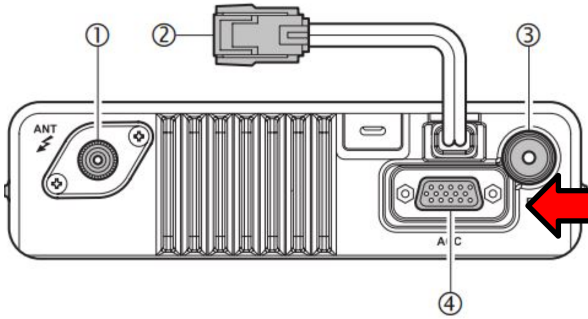
Common radio technology

- Vertex VX-4600 has been selected for the project
- Radio is ISED (aka IC) type approved
- Full spectrum (136 – 174 MHz) 50W VHF and (400 – 470 MHz) UHF 45W radio
- 512 channels / 32 zones
- User friendly software programmable
- Robust commercial feature set + 3 year warranty
- Dedicated 15-pin D-Sub rear port connector for TNC

Vertex VX-4600 VHF & UHF

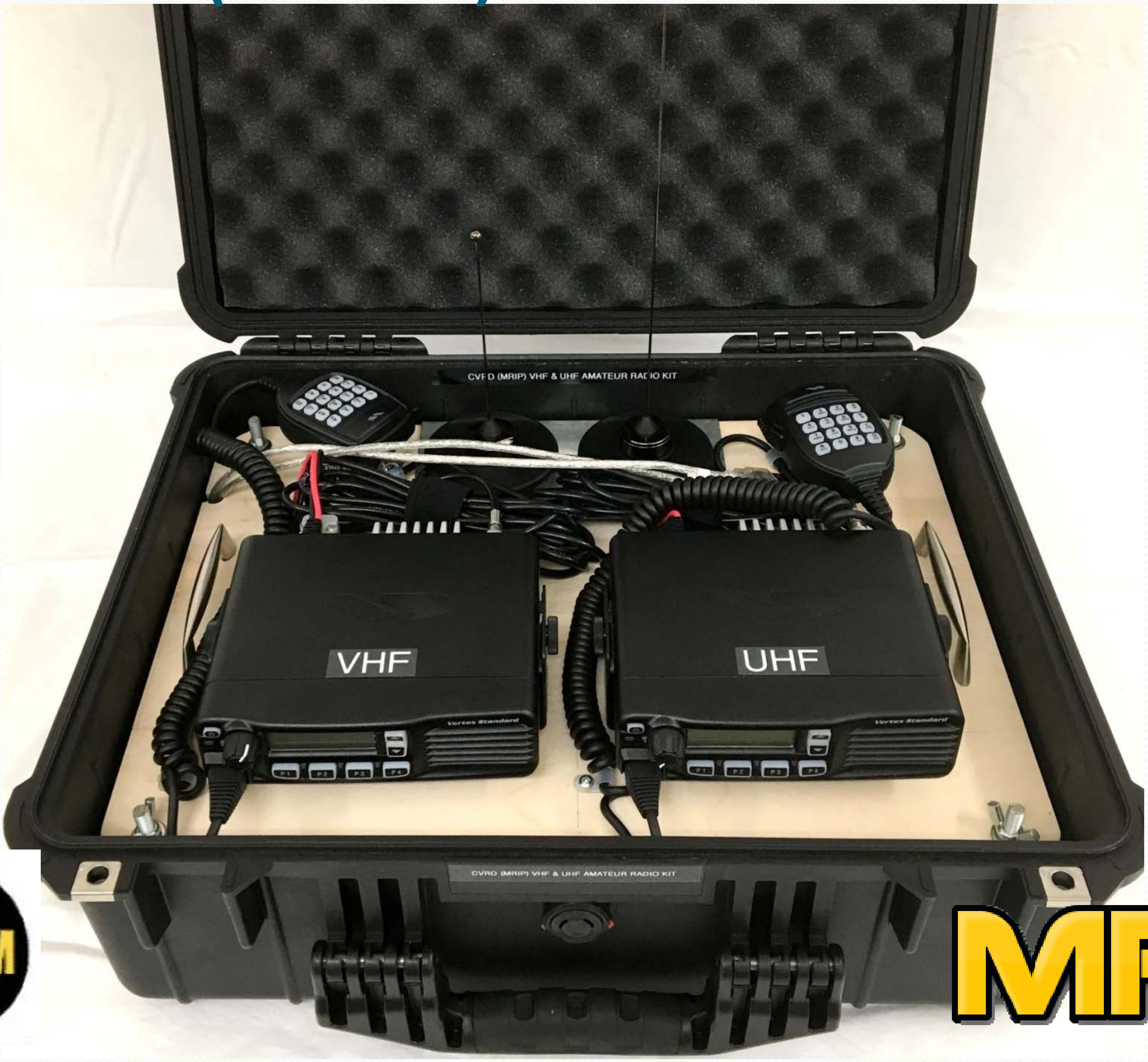


15-pin rear port to connect TNC

VHF

UHF

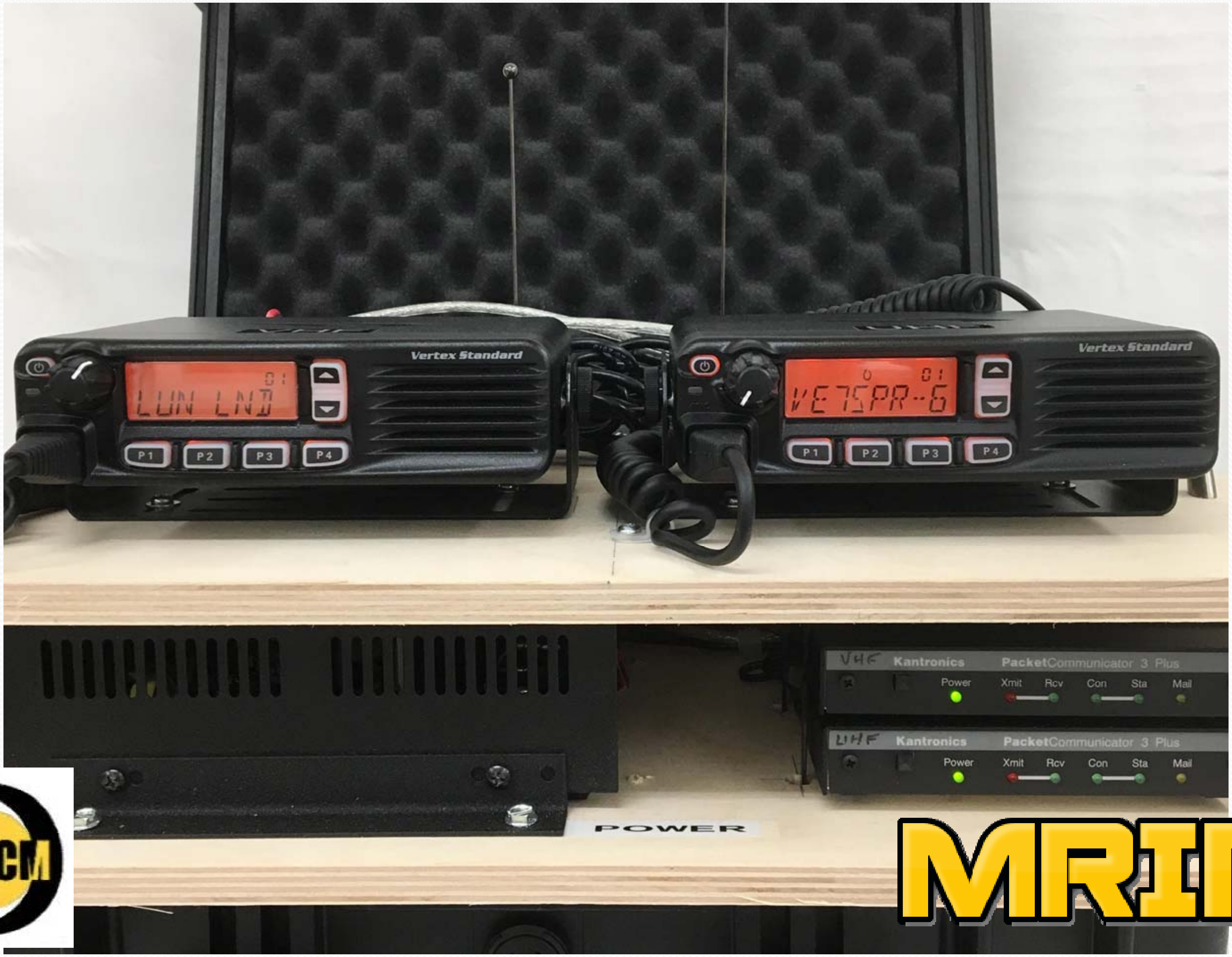
CVRD (MRIP) Amateur Radio Kit


CVRD (MRIP) VHF & UHF AMATEUR RADIO KIT
VHF
UHF
Vertex Standard
Vertex Standard
P1
P2
P3
P4
P1
P2
P3
P4
CVRD (MRIP) VHF & UHF AMATEUR RADIO KIT

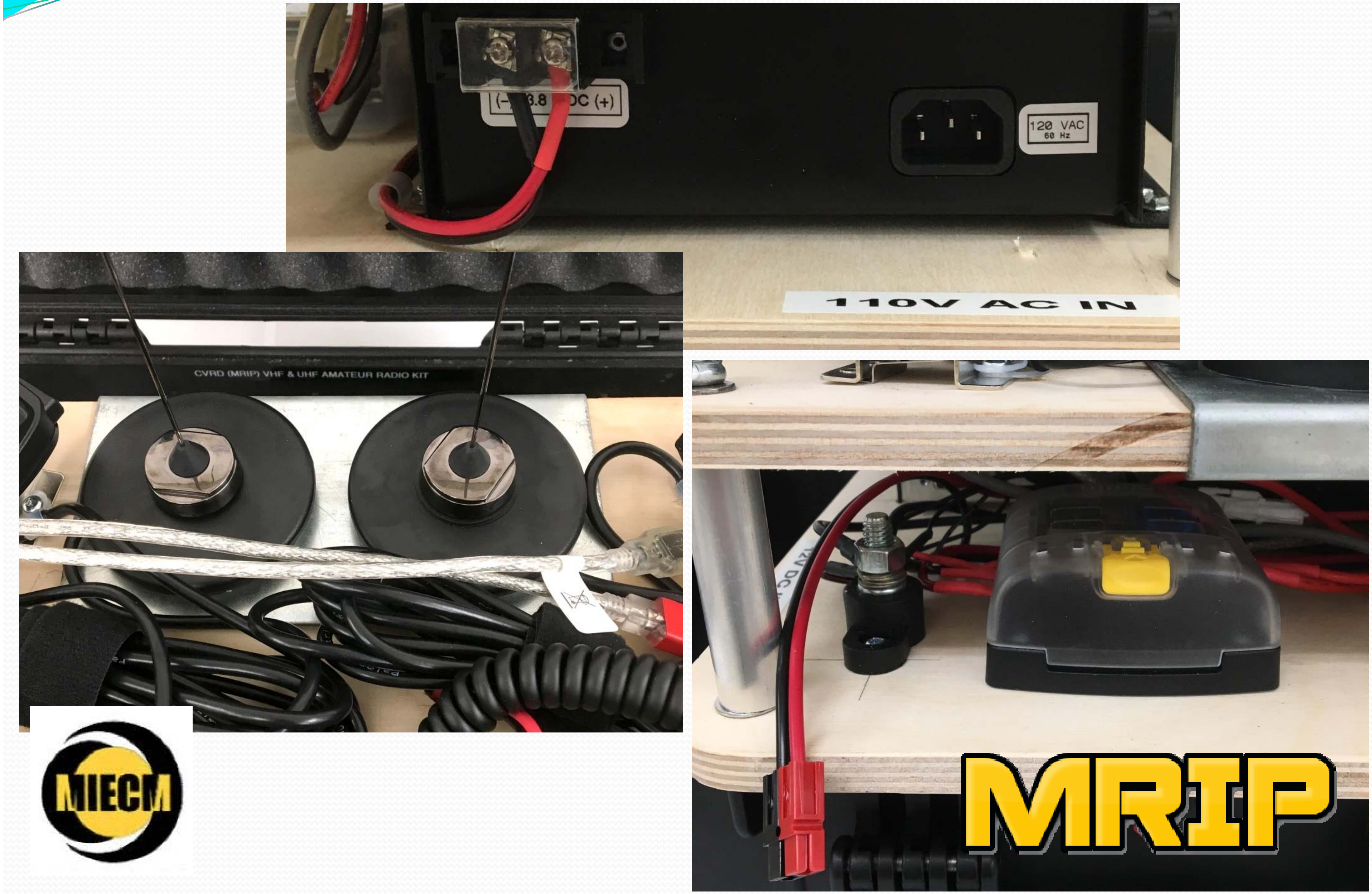
MIECM

MRIP

CVRD (MRIP) Amateur Radio Kit



CVRD (MRIP) Amateur Radio Kit



Value to local jurisdictions…

- Interoperability plan established before large scale event
- Common radio strategy for all partners / jurisdictions
- Creation of radio asset inventory for advance planning
- Agreement to openly share radio frequency information
- Implementation of common radio code-plug programming

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Next steps…

- ✓Approval in principle of the interoperability concept
- ✓ Investigate implementation of linked radio network
- ✓ Approval in principle to utilize common radio platform
- ✓ Support for gathering radio frequency data in each area
- Support for common approach to EMBC frequencies
- ✓ MIERCT committee would coordinate data gathering
- ✓ MIERCT members would create base code plug
- Presentation of the base code plug to MIECM for approval
- Development of common use strategy
- ✓ Program and deploy a VHF / UHF radio test package
- ✓ Next steps with network owner (underway

MRIP Contact

- For MRIP details, please contact:

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Questions?